

## Remarks

Applicants respectfully request reconsideration of the present U.S. Patent application as amended herein. Claims 12 and 18 have been amended. No claims have been added or canceled. Thus, claims 1-37 are pending.

### CLAIM REJECTIONS - 35 U.S.C. § 102(b) - Igarashi

Claims 1-37 were rejected as being anticipated by U.S. Patent No. 5,539,466 issued to Igarashi, et al. (*Igarashi*). For at least the reasons set forth below, Applicants submit that claims 1-37 are not anticipated by *Igarashi*.

Claim 1 recites:

utilizing even-parity field prediction to unidirectionally predict content of each of a plurality of fields of the predicted frame from corresponding fields of only the temporally closest anchor frame, ***wherein the unidirectionally predicted frame comprises a frame that is defined as a bi-directionally predicted frame according to an encoding protocol for the stream of data.***

Thus, Applicants claim using unidirectional prediction to predict the contents of a frame that is ***defined as a bi-directionally predicted frame by the encoding protocol*** being used for the stream of data.

In discussing *Igarashi*, the Office Action cites column 10, lines 58-67 as disclosing unidirectional prediction to predict the contents of a frame that is defined as a bi-directionally predicted frame by the encoding protocol being used for the stream of data. However, the cited portion of *Igarashi* merely states that various encoding and prediction techniques exist. Figures 7-12 and the related description describe use of the encoding techniques in greater detail. Because *Igarashi* specifically lacks

...wherein the unidirectionally predicted frame comprises a frame that is defined as a bi-directionally predicted frame...

Therefore, Applicants submit that *Igarashi* fails to anticipate the claimed invention because *Igarashi* does not disclose a unidirectionally predicted frame that is defined as a bi-directionally predicted frame according to the encoding protocol.

Claims 2-11, 31, 32 and 33 depend from claim 1. Because dependent claims include the limitations of the claims from which they depend, Applicants submit that claims 2-11, 31, 32 and 33 are not anticipated by *Igarashi* for at least the reasons set forth above.

Claim 12 recites:

a motion estimation circuit to receive a stream of data comprising at least an anchor frame and a predicted frame, and to utilize even-parity field prediction to unidirectionally predict content of each of a plurality of fields of the predicted frame from corresponding fields of only a temporally closest anchor frame in the stream of data, ***wherein the unidirectionally predicted frame comprises a frame that is defined as a bi-directionally predicted frame according to an encoding protocol for the stream of data.***

Thus, Applicants claim a motion estimation circuit that performs field prediction to unidirectionally predict a frame that is defined as a bi-directionally predicted frame according to the encoding protocol used.

As discussed above, *Igarashi* discloses conventional frame prediction and motion compensation. Therefore, *Igarashi* does not disclose a motion estimation circuit as claimed in claim 12.

Claims 13-17, 34 and 35 depend from claim 12. Because dependent claims include the limitations of the claims from which they depend, Applicants submit that

claims 13-17, 34 and 35 are not anticipated by *Igarashi* for at least the reasons set forth above.

Claim 18 recites:

A storage medium comprising a plurality of executable instructions which, when executed, causes an executing processor to implement a motion estimation function to utilize even-parity field prediction to unidirectionally predict content of each of a plurality of fields of a predicted frame from corresponding fields of only a temporally closest anchor frame, ***wherein the unidirectionally predicted frame comprises a frame that is defined as a bi-directionally predicted frame according to an encoding protocol for the stream of data.***

Thus, Applicants claim a storage medium having instructions to implement motion estimation that performs field prediction to unidirectionally predict a frame that is defined as a bi-directionally predicted frame according to the encoding protocol used. Claims 19, 36 and 37 depend from claim 18.

As discussed above, *Igarashi* discloses conventional frame prediction and motion compensation. Therefore, *Igarashi* does not disclose a storage medium having instructions to implement motion estimation as claimed in claims 18, 19, 36 and 37.

Claim 20 recites:

predicting, unidirectionally, content of each of a plurality of fields in non-reference frames and select reference frames using information contained in merely corresponding fields of a single past or subsequent, temporally closest, reference frame, ***wherein the unidirectionally predicted non-reference frames comprise a frame that is defined as a bi-directionally predicted frame according to an encoding protocol for the stream of data.***

Thus, Applicants claim motion estimation that performs field prediction to unidirectionally predict a frame that is defined as a bi-directionally predicted frame according to the encoding protocol used. Claim 30 is directed to a storage medium

comprising a plurality of executable instructions which, when executed by a computing system, cause the computing system to implement a method according to claim 20.

As discussed above, *Igarashi* discloses conventional frame prediction and motion compensation. Therefore, *Igarashi* does not disclose a motion estimation circuit as claimed in claims 20 and 30.

Claims 21-29 depend from claim 20. Because dependent claims include the limitations of the claims from which they depend, Applicants submit that claims 21-29 are not anticipated by *Ueda* for at least the reasons set forth above.

CLAIM REJECTIONS - 35 U.S.C. § 103(e) - *Gonzales*

Claims 1-5, 9, 12-15 and 18-37 were rejected as being anticipated U.S. Patent No. 5,652,629 issued to Gonzales (*Goñzales*). For at least the reasons set forth below, Applicants submit that claims 1-5, 9, 12-15 and 18-37 are not anticipated by *Gonzales*.

Claim 1 recites:

utilizing even-parity field prediction to unidirectionally predict content of each of a plurality of fields of the predicted frame from corresponding fields of ***only the temporally closest anchor frame***, wherein the ***unidirectionally predicted frame comprises a frame that is defined as a bi-directionally predicted frame*** according to an encoding protocol for the stream of data.

Thus, Applicants claim using unidirectional prediction to predict the contents of a frame that is defined as a bi-directionally predicted frame by the encoding protocol being used for the stream of data. Further, only the temporally closest anchor frame is used.

Referring to Figures 5 and 9 of *Gonzales*, two anchor frames are used. Specifically, Figures 5 and 9 refer to a previous anchor frame 501, a current frame 502 and a future anchor frame 503. Unidirectional motion estimation is performed on two

anchor frames, one previous and one future, to determine motion estimation information.

*Gonzales* clearly discloses multiple anchor frames and therefore cannot anticipate the invention as claimed in claims 1-5, 9 and 31-33.

Claim 12 recites:

a motion estimation circuit to receive a stream of data comprising at least an anchor frame and a predicted frame, and to utilize even-parity field prediction to unidirectionally predict content of each of a plurality of fields of the predicted frame from corresponding fields of ***only a temporally closest anchor frame*** in the stream of data, ***wherein the unidirectionally predicted frame comprises a frame that is defined as a bi-directionally predicted frame according to an encoding protocol for the stream of data.***

Thus, Applicants claim a motion estimation circuit that performs field prediction to unidirectionally predict a frame that is defined as a bi-directionally predicted frame according to the encoding protocol used. Further, only the temporally closest anchor frame is used.

As discussed above, *Gonzales* does not disclose use of only a temporally closest anchor frame. Therefore, *Gonzales* cannot anticipate the invention as claimed in claims 12-15.

Claim 18 recites:

A storage medium comprising a plurality of executable instructions which, when executed, causes an executing processor to implement a motion estimation function to utilize even-parity field prediction to unidirectionally predict content of each of a plurality of fields of a predicted frame from corresponding fields of ***only a temporally closest anchor frame, wherein the unidirectionally predicted frame comprises a frame that is defined as a bi-directionally predicted frame according to an encoding protocol for the stream of data.***

Thus, Applicants claim a storage medium having instructions to implement motion estimation that performs field prediction to unidirectionally predict a frame that is defined

as a bi-directionally predicted frame according to the encoding protocol used. Further, only the temporally closest anchor frame is used.

As discussed above, *Gonzales* does not disclose use of only a temporally closest anchor frame. Therefore, *Gonzales* cannot anticipate the invention as claimed in claims 18, 19, 36 and 37.

Claim 20 recites:

predicting, unidirectionally, content of each of a plurality of fields in non-reference frames and select reference frames using information contained in *merely corresponding fields of a single past or subsequent, temporally closest, reference frame, wherein the unidirectionally predicted non-reference frames comprise a frame that is defined as a bi-directionally predicted frame according to an encoding protocol for the stream of data.*

Thus, Applicants claim motion estimation that performs field prediction to unidirectionally predict a frame that is defined as a bi-directionally predicted frame according to the encoding protocol used. Claim 30 is directed to a storage medium comprising a plurality of executable instructions which, when executed by a computing system, cause the computing system to implement a method according to claim 20.

As discussed above, *Gonzales* does not disclose use of only a temporally closest anchor frame. Therefore, *Gonzales* cannot anticipate the invention as claimed in claims 20-30.

#### CONCLUSION

For at least the foregoing reasons, Applicants submit that the rejections have been overcome. Therefore, claims 1-37 are in condition for allowance and such action is earnestly solicited. The Examiner is respectfully requested to contact the undersigned by

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Atty. Docket No. 042390.P7110  
Examiner Vo, Tung T.  
TC/A.U. 2613

telephone if such contact would further the examination of the present application.

Please charge any shortages and credit any overcharges to our Deposit Account number  
02-2666.

Respectfully submitted,  
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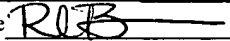
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